

1. Will Allen Bradley be performing any other work other than installing the motor control center within the control room? If so, what will there job function(s) consist of?
No
2. Will there be a standard connector layout and pinout for the engine adapter interface plate or will the winning contractor have the option to rearrange the interconnects?
The existing layout has some measure of standardization between all cells which CCAD would like to retain where possible. With a new system, accommodation may be made to replace the existing layout with something different.
3. Is modification of the interface plate acceptable?
Yes, But prefer not doing so except within the existing profile.
4. Will winning contractor be responsible for any mechanical linkages needed for controlling the servos/motors (i.e. throttle, water, etc.) on the engine(s)?
Yes
5. Does the Government assume the PC used for troubleshooting, described in C3.3.3. para. 2, will be installed in the engine control room or is it left to the bidder for the location of this computer system?
In control room
6. Is there a standardized format (spreadsheet, database, ASCII, etc.) required for storing collected data on the 'troubleshooting computer system'?
No
7. Will the engine starter motor(s) be installed and certified in the test cell (or the back room of the test cell) prior to this contract award?
Starters will be provided, and hydraulic and compressed air service will be accessible. Control of these must be included in the project.
8. Section C3.3.2 calls out a system with remote monitoring capability, are there any restrictions on wireless devices being used within the test cells or in the testing area?
None

9. Will base mounted-type engine stands be considered? (Or is the current monorail-mounted configuration required?)
Monorail system will be used
10. If the monorail-mounted configuration required, will the current T55 and T700 engine mounting frames be available for re-use, or are new engine mounting frames required?
Existing frames will be available
11. What is the maximum allowable weight capacity for the monorail?
Currently weight-tested for 2200 lb, being evaluated for greater capacity for use with T55-GA-714A engine.
12. What is the maximum allowable weight allowance for the engine/engine mount/dynamometer?
As in #11.
13. What are the weights of the engines and the existing engine mounting frames (if they are to be re-used)?
Approximately 2100 pounds
14. Are detailed drawings of the monorail strongback and existing engine mounting frames available?
Yes

15. Will a list of Industry Day Attendees / Participants be provided?
This info has been provided
16. Can a list of contracts that have already been awarded around Test Cell be provided to all bidders?
For example:
- a) Southwest Research Institute - Contract to study consolidation of computer systems.
 - b) Anteon Corporation - Contract for Cooling Towers and Cell
Refurbishment Contract N00140-01-D-K012-0040
 - c) Company awarded to provide Water Brake?
TestLogic, Rod Gwillam, 203-315-1077
17. Could you please provide a list of any government owned equipment that is available and may be used at the contractor's option?
Only those things listed in the RFP.

18. We have encountered a problem with Honeywell, as they will not provide a quote to us, or any other bidder, for items listed in the SOW Appendix B, Specific Component Requirements, Vendor Specific Components

The following vendor specific components are required for the C&I system. Alternates to these systems will be considered when the alternate provides the minimum technical requirements as well as enhanced capabilities. *In particular, the Vibration System, T55GA714A Operator Console, T55GA714A Flight Line Test Set, and Oil Temperature Controller are of particular interest for alternates.*

The oil temperature system is being installed as part of the cell refurbishment, although temperature control may require some interface to the console.

The requirement for a dyno is to be removed. We are still in the process of determining whether the Kahn brake will function in our environment. It was anticipated that it would be complete before this contract was released, but that didn't happen.

Contractor will still need to provide stability control for the brake, although they may use a commercial off the shelf(COTS) system or develop their own.

19. Refurbishment drawings to be made available on internet.
20. "Certify" is the certification process for engine test cells at CCAD. After correlation IAW AED P3417, a production engine which has passed test requirements in another cell will be run under full engine test procedure in the new cell to validate the test parameter functions.
21. CCAD needs to have access to code in all software installed in order to be able to adjust as required in the future. That is, we require software to not be proprietary to the extent that it is not configurable by CCAD in the future. LabVIEW code developed (as an example) must be documented for future use. CCAD must have the capability to change software with changes in the DMWR.
22. CCAD calibration cycle is 90 days. The reporting should coincide with that sequence.
23. The data formats at this time are text, space delimited. Detailed information will be available in the DRP documentation.
24. The intent is to use the existing data collection system (ATETS) while the new one is being developed. With compatibility to the existing system, this section will be complied with. New data collection systems will match this data format.
25. We currently have both UNIX and Windows software packages. We have a mandate to move to Windows XP Professional for all equipment on our intranet. The interface is through ATETS, which is DOS-based and being prepared for upgrade. It will require a data transfer handshake, and text file generation.
26. T800 engine will no longer be a factor. The T700-GE-701D has no documentation as yet, but will require everything the same as the 701C, with an increase of 2% in SHP rating.
27. Final document delivery can be delayed beyond the 12-month limitation. All other activity should be completed within that period.
28. The growth capability referenced is to provide for future expansion within the hardware envelope. The software capability for data acquisition must allow for the expanded number of channels within the speed requirements.
29. The computer system referenced shall be capable of accessing data channels which relate to the functions of the test cell facilities while correlating them to specific engine parameters. This will be the computer which accesses the Allen-Bradley MCC data for facility troubleshooting. The only DAQ channels necessary will be those relating to water flow/pressure/temperature, dyno and engine vibration, and engine speed/load settings.
30. No preference on trend analysis software. It will be used for facility trending, but the ability to track sensor performance and calibration would be a plus.
31. Rapid shutdown would include throttle shutdown, fuel shutoff, and dyno load control for rapid but controlled spool-down of engine.

32. What are the DACS in use in the other test cell Foxboro A/I, Daytronic System 10
33. Is it possible to obtain existing test cell and control room layout drawings. The drawings of engines adapter for T55 and T700 would also be helpful for quoting. Not feasible. All are on paper.
34. Could you send information about the connectors on the coupling plate and their repartition. See table at end of response.
35. *Reference § C1.0*
Who will perform the preliminary test cell refurbishment, what kind of interactions could we expect to have with these suppliers. Anteon, work will be complete prior to start. Drawings available on line.
36. *Reference § C3.5*
Could CCAD provide free storage room during installation on site, could we have the help of CCAD team / material for logistic inside the Depot. Storage space outside the building will be provided. Contractor shall provide their own labor, material and logistic support.
37. The control and command will be replaced under another contract. We understand this will be achieved through PLC, how will the command be send to this PLC (for example: lights on, water pump on...). Does the other contractor includes a push buttons control panel or computer command system or do we have to supply cell command to this PLC. Please give more details Buttons for control of PLC will be required in this contract. Control will be through Allen-Bradley ControlLogix PLC to the MCC.
38. What type of indication have to be available for remote maintenance, are they transducers information or global measurement line information. The trending and troubleshooting computer will link to the MCC and require information from the instrumentation system to correlate that information to events in the test cell. For example, when dyno trending is being looked at for pump and cooling tower performance, information on engine power settings will provide a means for putting that data into perspective.
39. What type of modification and maintenance operation have the employees of CCAD to be able to do on the software, could you give examples. CCAD will need to be able to update software any time the DMWR changes in a way that affects testing. Also, the ability to add screens or modify screen presentations and adapt calibration procedures is a required capability. CCAD is not looking to be able to rewrite any software, but to simply maintain it.

We have run into issues where simply changing out a printer requires a new contract, and want to avoid such problems.

40. *Reference § C1.1.2*
Is a “test point” equivalent to a steady state point? **All current engine test points are steady state.**
Are the Chauvenet Criteria or similar measurement filters applicable to steady points or to real time data acquisition? **Sampling of data for complicity with Army requirements calls for an average of five scans. In a situation where outliers make these points unreliable, Chauvenet criteria may be necessary, although it isn’t seen as an issue in current systems.**
What means 2500 channels per second scanned, do we have to provide a 2500 channels capability? The requested scan frequency is 10 Hz in an other specification paragraph, we will use this rate for our proposal. Please confirm this assumption. **The requirement is for 250 channels sampled at 10Hz.**
41. *Reference § C1.1.3*
Is the Torque measurement probe included in the CCAD supplied material or does the contractor have to supply it. **Torque measurement is through a strain gage device included on the dyno installation.**
42. *Reference § C1.1.4*
"Visibility on the health of system" is requested on external workstation, what type of indication does it include, could you please give examples. **This refers to the ability to track and monitor facility performance with correlation to engine settings.**
43. *Reference § C1.1.5*
What are the existing TPS if available.
Do we have to provide a centralized setup program or is it already in place.
How are the cell setup downloaded from TPS server.
Is this server already in place at CCAD or does the contractor have to provide it for future test cell upgrade. **The server is in place, but is not currently in use.**
What are the interfaces with GE / Honeywell performance rating program (DRP). **The GE DRP is a perl script which we have adapted for use in a WindowsXP ~~WindowsXP~~ Professional environment by using a LabVIEW program to link it to the Daytronic System 10 systems in other cells. The Honeywell software is only recently received, and has not yet been proven in any of our cells.**
44. *Reference § C2.0*
"Repair parts" are requested in the scope of supply, does the CCAD expect to receive a spare parts list or does the contractor have to provide a spare parts stock with the delivered material. **A spare parts list is required, with enough spares furnished to cover anticipated needs for one year.**

45. *Reference § C3.1.1.2*
We understand that as per the NFPA 423 code applicable to "*Construction and protection of aircraft engine test facilities*" § 3.3.2, only the lower level of the test cell (above 18 in. or 0.46 m) has to be classified as Class I Division 2 Hazardous Location. Please confirm this assumption. **Comply with provisions in NFPA 423.**
46. *Reference § C3.3.3*
It is requested that system have a 200% channels capacity growth capability. Is this increase requested for the software or for the hardware. **Capacity growth is a software issue, although cabinet space needs to be available.**
What is a jam test. Is it similar to a transient test. **Transients to verify engine response speed.**
Open software for trends analysis is requested, which one is preferred by CCAD. **No preference. An Excel program, LabVIEW, or trend specific.**
Which information should be sent to the IT system described in APPENDIX D **Test data points.**
47. *Reference § C3.3.5.3*
How does CCAD obtain second source sensor for gas generator RPM as we cannot access to this shaft inside the engine. **We do not currently do this. The requirement is to be sure that speed signals from the engine sources continue to be monitored if some other means (mag pickup, etc) is used in the design.**
48. *Reference § C3.3.5.4*
Who is providing the energy source for engine starter, what is included in the data acquisition and control system. We understand that we should only provide command signal for this device, please confirm. **There are hydraulic and air provided with electrically controlled valves in place per refurbishment drawings. Necessary control beyond this installation is required under this contract.**
49. *Reference § C3.3.5.5*
What are the interactions needed with fire suppression system. **A 24vdc signal to a relay in the existing Cardox fire suppression system from a control in the Control Room.**
50. *Reference § C3.4.*
Do we have to provide some parts of the engine dress kits? if yes which one exactly. **Engine dress kits will be GFE. This does not include control or positioning equipment, but includes the plumbing necessary for engine operation such as drains and fuel supply lines.**

51. *Reference § C3.8*
We assume that CCAD will supply engines and all related consumables for all requested system testing. This will include but not limited to fuel, oil, pilot, engine insurance. Please confirm. **Confirmed**
52. *Reference § C3.8.5.1*
Does CCAD purchase correlation from OEM directly or do we have to supply it. **Will be required under this contract for T700, T55-712, and T55-714A engines per AED P3417A.**
53. *Reference APPENDIX B*
54. Which are the sensors and control components to be purchased to the OEMs. Where could contractor obtain quote for these items. Can we re-use the ones already installed if any (please provide list). **Engine specific controls and sensors are at the contractor's discretion. Select those which would best suit your particular system.**
55. What is ATETS II and which type of parameters should be sent to this device. **All engine parameters must be visible to the ATETS for that system to collect them as the operator takes a data point. None need to be sent, but will be called from ATETS.**
56. Who is supplying the water brake control system. What is the interface between C&I system and brake control system. **Contractor shall provide control of the inlet and outlet valves for the water brake through a stability system.**
57. Give more details about the software filters notion. **We currently have Butterworth filters on our data channels.**
58. Could you provide information about the following devices (interfaces, data or signals to be exchanged) :
Honeywell T55GA714A Operator console w/ engine controls and lever **Alternative system may be provided by contractor.**
Honeywell T55GA714A Engine dress kit P/N LTCT 31100 **All but control and indicating will be furnished under this contract. All other will be GFE (Listing of part numbers for entire dress kit will be furnished on line).**
Honeywell T55GA714A Oil temperature controller **Heat exchanger and plumbing being installed by refurbishment contractor per drawings available on line. Control will be provided under this contract.**
Honeywell T55GA714A Flight line test set **GFE**
59. Spare temperature (RTD and TC) harnesses have to be provided up to where should they be routed. **Routing from the control room into the test cell so that they may be accessed in the future without the need for new cell penetrations.**
60. Give more details about the software filters notion. **Above**
61. What are the vendor specific components which have to be purchased? Ex vibration system, T55GA714A operator console, T55GA714A flight line test set. Oil temperature controller? **Honeywell has apparently declined to offer quotes to other vendors on these items. The SOW provides for the ability to offer alternatives.**

62. Why are two levers requested for the brake control? **Water in and water out control. An alternative design will be considered.**
63. Throttle systems, four joystick will be provided but who provide the receivers (electrical motors, S/R signals,...) **Provide within contract.**
64. 64 push buttons are required but only 10 are defined is this amount necessary, where should they be placed **Buttons will be centrally located on the panel console except those which may best serve the operator by being co-located with the throttle and water brake controls.**
65. Does PID solution software like expert tune have to be implemented in the system? **No. May be a technical asset in evaluation.**
66. What could be example of future use for the 8 PID closed loop controls. **Anticipation of future automated test requirements.**
67. Could we have more precision about the special connectors (signals assignation) **See table below**
68. What are exactly the remote analysis and self test requirements. **The ability to link into the data storage for analysis of system health trending and monitoring. Remote access will be restricted to computers on the industrial LAN.**

Adapter Plate Connectors

Part Number	Nomenclature	MFG
MS3100E-12S-3P	Connector	
MS3137E-3S	Connector	
722283-6J	Quik Kconnect Thermocouple Strip	Honeywell, PA
722283-3K	Quik Kconnect Thermocouple Strip	Honeywell, PA
MS3100E-14S-5S	Connector	
DPDMA45-33S-1G	Connector	Cannon, CA
MS3110E-8-3S	Connector	
MS3110E-10-6S	Connector	
MS3110E-8-4S	Connector	
MS3100E-22-2S	Connector	
MS3100E-36-10S	Connector	
DPDMA78-34P-1G	Connector	Cannon, CA
DPDMA78-33S-1G	Connector	Cannon, CA
DPDMA45-34P-1G	Connector	Cannon, CA
DPDMA45-33S-1G	Connector with #16 TC Sockets 8AL, 8CH, 6IR, 6CO	Cannon, CA
DPDMA45-34P-1G	Connector with #16 TC Sockets 8AL, 8CH, 6IR, 6CO	Cannon, CA

69. Confirm what needs to be replaced on the adapters. Many 'enhancements' were suggested; which are optional and which are mandatory?
The adapters should be retained as much as possible. Changes included under this contract will eventually be incorporated into other adapters for standardization.

70. Confirm that the automated control is limited to entering a speed and torque on the DAS and having the engine and dynamometer control to that point. Confirm that automated test sequences and fully automated testing are no longer required.
The Director of Engine Production has determined that he would, in fact, want to see complete automated test capability.
71. Confirm that the new PLC (provided under separate contract) will control all facility functions and will have a standard Ethernet interface through which to exchange data. No facility control hardware will be required through the new system other than the troubleshooting computer. A software interface to the new PLC from the DAS and the troubleshooting computer should be provided under this contract.
The PLC being installed in the control room under the refurbishment contract is an Allen-Bradley ControlLogix which will interface the MCC to the control panel for ETC 12, which shares the control room with ETC 11. An identical PLC will be required to perform the same function for ETC 11 under this contract. Mid-Coast Electric Supply is doing this work. Tracy Ross (361-882-2585, tracyr@mcesi.com) is the contact for this work and can provide information.
72. Confirm that all Data Reduction Programs will be available under Windows XP for integration into the new system.
The GE program will operate under Windows XP Professional. The Honeywell program will not.
73. Confirm the T800 is no longer part of the requirements.
Confirmed
74. Confirm that the 701D will be similar to the 701C with only minor changes in power. No additional control or measurement channels or devices will be required other than those provided for the 701C.
Confirmed
75. Please confirm that all test cell mounted equipment should meet Class I Division 2 requirements. NFPA 423 only requires this up to 18 inches above the floor.
Comply with NFPA 423.
76. Page 44 of solicitation apparently has an embedded Excel file, which cannot be opened. Please provide
Indian Head
77. Page 45 of solicitation apparently is a 4 page *.pdf file, but only page 4 shows up on screen or in print. Please provide all pages
Indian Head
78. Drawings on pp 96-100 of solicitation are difficult to read. Please provide copies
Indian Head
79. Does the GFE water brake system include water control valves, and control system for the valves?
Main shutoff valves will be included per the refurbishment drawings. If these are considered adequate for stability control of the system, only control of these valves need be provided.
80. Is there a requirement for lube oil conditioning package for engine, water brake, or T700 drive line gearbox?
GFE

81. Are the air and hydraulic engine starter systems to be provided under the contract, or are they GFE?

The starters themselves are GFE. The air/hydraulic lines are plumbed to the test frame (refurbishment drawings), and control to be provided under this contract.

Paragraph	Questions or Statements at Issue	Concern	Response
C1.1.2	Is 2500 Ch/sec scanned realistic?		The requirement is for 10Hz channels.
	Fully programmable and maintainable by CCAD employees.	What are their skill sets?	CCAD has individuals with high level computer languages and skills.
	Firmware must be delivered and non-proprietary.	Need to tell CCAD that firmware within instrumentation is not deliverable. This would include our throttle software.	The requirement is for the delivery of any coding within sensors within the test site.
C1.1.4	What is the LAN connectivity provided by CCAD?	This could be very labor intensive paperwork and approval documentation required. Tunneling through government firewalls difficult to get approval for. Is this pre-approved?	The requirement for monitoring facility, and the industrial LAN information is, as you pointed out, outside the scope of building this system. CCAD/IT, the requirement has been rescinded.
C1.1.5	...shall interface with all the engine test,...	How are they connected? What do you mean when you say interface between cells?	This requirement has been determined to be a determination of WindowsXP. The requirement will remain for the system to the industrial LAN DAQ systems and their format.
	...located in a central repository...	What is the specification of the existing central repository interface? Is a new portion or complete repository to be provided? Is this the CDRP?	The storage will be in a format for access.
	Replacement integrated software system that can be used with the existing CCAD DAQ is preferred.	What is existing system? Hardware and software interface specification should be provided. Does new software have to run on the old system?	This will be a completely new software. The existing system has been evaluated for upgrade for compatibility with WindowsXP.
	Test Initiation/Evaluation/Archive System	Will the new system be using existing Test Program Sets for the T700 and T55 engines?	The new system should provide the furnished DMWRs.
C3.3.3	Parallel computer system shall be installed...	Does this mean a separate computer to control for only facility related sensors? An architecture picture with detailed explanation during the industry will be required to make this clear.	This computer will connect to the test facility and will need to be able to access data to correlate information from the test facility.
	Single Operator Workstation	Is the pilot/co-pilot arrangement figurative only or is two person operation required?	Two-person operation is required. The arrangement is, in this case, should look familiar to those familiar with the test facility. They do not need to be identical.
	Can we meet the "proven" closed loop requirement?	Do you have a specific system you recommend? Define what you mean by closed loop. There are variations	We have requested known test results for this reason. The closed loop system is for automated testing of the engine.

		and combinations of hardware and software that can make up a closed loop system. Is the dyno included in that control? Is this just within the throttle system or integrated with the TPS?	requirements. The cell should regard. In addition, we require available to handle contingencies engines to troubleshoot problems system being off-line. The cell
	Open source software...	What is your definition of open source? Do you have something that is being used today?	LabVIEW appears to be the government and testing agencies experience with RSView are considered.
C3.6.4	120 VAC	What are the total amps of the circuit?	The amperage availability is drawings provided on line.
C3.9.7	Is there an automated computer control we have to follow?		No automated computer control contract allows for contract
Appx B	What scan rate is needed to define real time?	Define what you mean by real time?	10Hz sample rate.
Control and Stimulus Capabilities	...no delay or hysteresis...	Do you mean minimal delay or do you have some specified allowable parameter?	The intent is for there to be positioning is the same regardless approach. Again, this is measurable perceptible to the operator.

82. The diagrams in Appendix C are not available within the solicitation. Can the Navy provide diagrams or drawings that comprise Appendix C of the solicitation?
83. Reference C3.1, The Engine DMWR reference in the table for the T700 and T55 engines can they be supplied for proposal generation? **DMWR 55-2840-265 is not yet available in final form. CCAD will provide the test section at the earliest convenience. There will be a meeting on 3/9/05 regarding this issue, and the data will be posted as soon as it is available.**

ENGINE	REDECOM Requirement
T700-GE-401/-401C/-700/-701/-701C	Engine DMWR 1-2840-248
T55-L-712	Engine DMWR 55-2840-254
T55-GA714A	Engine DMWR 55-2840-265
All	AED P3417

84. We understand that the Government is currently reworking the engine adapter coupler plate as part of the ongoing test cell facility upgrades. Will all of the test cell coupling plate connectors be installed and provided as part of the test system upgrade? **The adapter plate is not being worked. Any changes which will be required by the contractor design is all that will be changed.**

(a) If so, will the pins for the electrical connectors be provided as GFE?

(b) **Adapter Plate Connectors**

Part Number	Nomenclature	MFG
MS3100E-12S-3P	Connector	
MS3137E-3S	Connector	
722283-6J	Quik Konnect Thermocouple Strip	Honeywell, PA
722283-3K	Quik Konnect Thermocouple Strip	Honeywell, PA
MS3100E-14S-5S	Connector	
DPDMA45-33S-1G	Connector	Cannon, CA
MS3110E-8-3S	Connector	
MS3110E-10-6S	Connector	
MS3110E-8-4S	Connector	
MS3100E-22-2S	Connector	
MS3100E-36-10S	Connector	
DPDMA78-34P-1G	Connector	Cannon, CA
DPDMA78-33S-1G	Connector	Cannon, CA
DPDMA45-34P-1G	Connector	Cannon, CA
DPDMA45-33S-1G	Connector with #16 TC Sockets 8AL, 8CH, 6IR, 6CO	Cannon, CA
DPDMA45-34P-1G	Connector with #16 TC Sockets 8AL, 8CH, 6IR, 6CO	Cannon, CA

(c) **Two (2) (one adapter for each engine type needs to be upgraded as a part of this program)?**

(d) Does the Government anticipate that the adapter modifications, if any, will be limited to coupling plate(s) and engine control/test signal interfaces? **Yes**

85. We understand that the Government is currently installing a new/rebuilt water system for the engine load system as part of the ongoing test cell facility upgrades. Will the GFE-provided load system be a complete operational system including the control package? **Control is not included.**
86. Please provide a description of the system components to be provided as GFE. **Refurbishment drawings included on line.**
87. Air Inlet Pressure specifies four (4) static baskets, each with four (4) sensor inputs. The Channel list provided only lists four (4) measurements. Is the requirement for four (4) or sixteen (16) transducers? **Four measurements is correct.**
88. In our experience, the T700 typically uses an air start system and the T55 uses a hydraulic start system. In this solicitation package we can find no requirements to measure hydraulic start or accumulator pressures. Please clarify the type of start systems employed for each engine at your facility. **Your assumption is correct. That information will be on the refurbishment drawings.**
89. What are the Part Numbers of the existing GE T700 encoders? Are these the same encoders used for the T55? **Not the same. Use whatever encoders fits with your instrumentation system.**
90. Where are the ignition voltage and current measurements physically taken? **Via engine harnesses.**

91. Why must the compressor discharge pressure measurement range be programmable if 0 to 300 psig covers all ranges required?
92. Would a 0 to 300 psig transducer with a +/- 0.05% FS accuracy meet this specification? **Yes**
93. The Government will now be providing the engine load system as GFE. We have found no data channels described for the load gearbox (e.g., pressure, temperature, vibration). Does the Government have any information regarding data channels required for the load/gearbox combination? **Water pressure, flow, and temperature will be provided under this contract. The water brake will require two vibration and eight temperature channels.**
94. Is the torque measurement system part of the GFE load system? **The strain gage provides a signal which must be used by the instrumentation contractor.**
95. Could you clarify whether we need to provide a specific gravity measurement for the turbine fuel flow system similar to that provided by the Coriolis fuel flow measurement system? **Confirmed**
96. Honeywell will not quote items listed in the SOW Appendix B, Specific Component Requirements, Vendor Specific Components. In light of this restriction, please advise if items 3, 4, and 5 (and subitems) will be provided GFE.
Honeywell T55GA714A Operator console w/ engine controls and lever **Alternative system may be provided by contractor.**
Honeywell T55GA714A Engine dress kit P/N LTCT 31100 **All but control and indicating will be furnished under this contract. All other will be GFE (Listing of part numbers for entire dress kit will be furnished on line).**
Honeywell T55GA714A Oil temperature controller **Heat exchanger and plumbing being installed by refurbishment contractor per drawings available on line. Control will be provided under this contract.**
Honeywell T55GA714A Flight line test set **GFE**